WHAT IS CLAIMED IS:

1. A multimedia contents converting apparatus configured to convert input multimedia contents to be displayed on a screen with a predetermined size, including text media and media other than the text media, into output multimedia contents to be displayed on a screen with a size smaller than said predetermined size, said apparatus comprising:

a text display time calculation processing unit for calculating a display time period of text media to be included in said output multimedia contents, on the basis of conversion instruction information;

a spatiotemporal layout information setting processing unit for setting spatiotemporal layout information on said output multimedia contents on the basis of said conversion instruction information; and

a contents conversion processing unit for converting said input multimedia contents into said output multimedia contents on the basis of said spatiotemporal layout information,

said spatiotemporal layout information setting processing unit setting a display time period of said text media included in said spatiotemporal layout information, on the basis of said display time period of said text media calculated in said text display time calculation processing unit, and setting a

27 playing time period of said media other than said

28 text media included in said spatiotemporal layout

29 information, on the basis of said display time period

30 of said text media set as said spatiotemporal layout

31 information.

1 2.   A multimedia contents converting apparatus

2 according to claim 1, wherein said text display time

3 calculation processing unit calculates said display

4 time period of said text media to be included in said

5 output multimedia contents, on the basis of text

6 information obtained from said input multimedia

7 contents and text display form information inputted

8 as said conversion instruction information.

1 3.   A multimedia contents converting apparatus

2 according to claim 1, wherein said spatiotemporal

3 layout information setting processing unit sets a

4 playing time period of said media other than said

5 text media included in said spatiotemporal layout

6 information to coincide with said display time period

7 of said text media set as said spatiotemporal layout

8 information.

1 4.   A multimedia contents converting apparatus

2 according to claim 1, further comprising:

3   a segment playing time setting unit for setting

4 a playing time period of each of segments of said

5 media other than said text media to be included in

6 said output multimedia contents;

7 a total playing time calculation unit for

8 calculating a total playing time period of all said

9 segments of said media other than said text media

10 on the basis of said playing time period of each of

11 said segments of said media other than said text media

12 set in said segment playing time setting unit; and

13 a repeat count setting processing unit for

14 setting a repeat count of said media other than said

15 text media on the basis of said display time period

16 of said text media calculated in said text display

17 time calculation processing unit and said total

18 playing time period of all said segments of said media

19 other than said text media,

20 said contents conversion processing unit making

21 a conversion of said media other than said text media

22 included in said input multimedia contents on the

23 basis of said repeat count set in said repeat count

24 setting processing unit.

1 5. A multimedia contents converting apparatus

2 according to claim 4, wherein said repeat count

3 setting processing unit sets, as said repeat count,

4 n (n : integer) which satisfies a condition that,

5 when said repeat count of said media other than said

6 text media is taken as n, said playing time period

7 of said media other than said text media becomes

8 shorter than said display time period of said text

9 media and, when said repeat count of said media other

10 than said text media is taken as n + 1, said playing

11 time period of said media other than said text media

12 becomes longer than said display time period of said

13 text media.

1 6.   A multimedia contents converting apparatus

2 according to claim 5, wherein said spatiotemporal

3 layout information setting processing unit is made

4 such that, after the completion of n repeated playings,

5 said media other than said text media is frozen until

6 a display end time of said text media.

1 7.   A multimedia contents converting apparatus

2 according to claim 4, wherein said repeat count

3 setting processing unit sets, as said repeat count,

4 n + 1 (n : integer) which satisfies a condition that,

5 when said repeat count of said media other than said

6 text media is taken as n, said playing time period

7 of said media other than said text media becomes

8 shorter than said display time period of said text

9 media and, when said repeat count of said media other

10 than said text media is taken as n + 1, said playing

11 time period of said media other than said text media

12 becomes longer than said display time period of said

13 text media.

1   8.   A multimedia contents converting method of

2   converting input multimedia contents to be displayed

3   on a screen with a predetermined size, including text

4   media and media other than the text media, into output

5   multimedia contents to be displayed on a screen with

6   a size smaller than said predetermined size, said

7   method comprising:

8   a text display time calculation processing step

9   of calculating a display time period of said text

10   media to be included in said output multimedia

11   contents, on the basis of conversion instruction

12   information;

13   a spatiotemporal layout information setting

14   processing step of setting spatiotemporal layout

15   information on said output multimedia contents on

16   the basis of said conversion instruction information;

17   and

18   a contents conversion processing step of

19   converting said input multimedia contents into said

20   output multimedia contents on the basis of said

21   spatiotemporal layout information,

22   in said spatiotemporal layout information

23   setting processing step, a display time period of

24   said text media included in said spatiotemporal layout

25   information is set on the basis of said display time

26   period of said text media calculated in said text

27 display time calculation processing step and a playing

28 time period of said media other than said text media

29 included in said spatiotemporal layout information

30 is set on the basis of said display time period of

31 said text media set as said spatiotemporal layout

32 information.

1 9. A multimedia contents converting method

2 according to claim 8, wherein, in said text display

3 time calculation processing step, said display time

4 period of said text media to be included in said output

5 multimedia contents is calculated on the basis of

6 text information obtained from said input multimedia

7 contents and text display form information inputted

8 as said conversion instruction information.

1 10. A multimedia contents converting method

2 according to claim 8, wherein, in said spatiotemporal

3 layout information setting processing step, a playing

4 time period of said media other than said text media

5 included in said spatiotemporal layout information

6 is set to coincide with said display time period of

7 said text media set as said spatiotemporal layout

8 information.

1 11. A multimedia contents converting method

2 according to claim 8, further comprising:

3 a segment playing time setting step of setting

4 a playing time period of each of segments of said

5 media other than said text media to be included in

6 said output multimedia contents;

7 a total playing time calculation step of

8 calculating a total playing time period of all said

9 segments of said media other than said text media

10 on the basis of said playing time period of each of

11 said segments of said media other than said text media

12 set in said segment playing time setting step; and

13 a repeat count setting processing step of setting

14 a repeat count of said media other than said text

15 media on the basis of said display time period of

16 said text media calculated in said text display time

17 calculation processing step and said total playing

18 time period of all said segments of said media other

19 than said text media,

20 in said contents conversion processing step, a

21 conversion of said media other than said text media

22 included in said input multimedia contents is made

23 on the basis of said repeat count set in said repeat

24 count setting processing unit.

1 12. A computer-readable storage medium storing a

2 multimedia contents conversion program which makes

3 a computer conduct the processing of converting input

4 multimedia contents to be displayed on a screen with

5   a predetermined size, including text media and media

6   other than the text media, into output multimedia

7   contents to be displayed on a screen with a size smaller

8   than said predetermined size, the conversion

9   processing comprising:

10   a text display time calculation processing step

11   of calculating a display time period of said text

12   media included in said output multimedia contents

13   on the basis of conversion instruction information;

14   a spatiotemporal layout information setting

15   processing step of setting spatiotemporal layout

16   information on said output multimedia contents on

17   the basis of said conversion instruction information;

18   and

19   a contents conversion processing step of

20   converting said input multimedia contents into said

21   output multimedia contents on the basis of said

22   spatiotemporal layout information,

23   in said spatiotemporal layout information

24   setting processing step, a display time period of

25   said text media included in said spatiotemporal layout

26   information is set on the basis of said display time

27   period of said text media calculated in said text

28   display time calculation processing step and a playing

29   time period of said media other than said text media

30   included in said spatiotemporal layout information

31   is set on the basis of said display time period of

32   said text media set as the spatiotemporal layout

33   information.

1   13. A computer-readable storage medium storing a

2   multimedia contents conversion program according to

3   claim 12, wherein, in said text display time

4   calculation processing step, said program makes said

5   computer conduct the processing of calculating said

6   display time period of said text media to be included

7   in said output multimedia contents on the basis of

8   text information obtained from said input multimedia

9   contents and text display form information inputted

10   as said conversion instruction information.

1   14. A computer-readable storage medium storing a

2   multimedia contents conversion program according to

3   claim 12, wherein, in said spatiotemporal layout

4   information setting processing step, said program

5   makes said computer conduct the processing of setting

6   a playing time period of said media other than said

7   text media included in said spatiotemporal layout

8   information to coincide with said display time period

9   of said text media set as said spatiotemporal layout

10   information.

1   15. A computer-readable storage medium storing a

2   multimedia contents conversion program according to

3   claim 12, wherein said program makes said computer

4   conduct:

5   a segment playing time setting step of setting

6   a playing time period of each of segments of said

7   media other than said text media to be included in

8   said output multimedia contents;

9   a total playing time calculation step of

10   calculating a total playing time period of all said

11   segments of said media other than said text media

12   on the basis of said playing time period of each of

13   said segments of said media other than said text media

14   set in said segment playing time setting step; and

15   a repeat count setting processing step of setting

16   a repeat count of said media other than said text

17   media on the basis of said display time period of

18   said text media calculated in said text display time

19   calculation processing step and said total playing

20   time period of all said segments of said media other

21   than said text media, and

22   in said contents conversion processing step,

23   said program makes said computer conduct the

24   processing of making a conversion of said media other

25   than said text media included in said input multimedia

26   contents on the basis of said repeat count set in

27   said repeat count setting processing unit.

1   16.   A multimedia contents conversion program which
2   makes a computer conduct the processing of converting
3   input multimedia contents to be displayed on a screen
4   with a predetermined size, including text media and
5   media other than said text media, into output
6   multimedia contents to be displayed on a screen
7   smaller than said predetermined size, said program
8   making said computer function as each of said
9   processing units constituting the multimedia
10 contents converting apparatus according to claim 1.

1   17.   A multimedia contents converting apparatus
2   comprising:
3   a control unit for conducting the processing of
4   converting input multimedia contents to be displayed
5   on a screen with a predetermined size, including text
6   media and media other than the text media, into output
7   multimedia contents to be displayed on a screen with
8   a size smaller than said predetermined size, on the
9   basis of conversion instruction information; and
10   a storage unit for storing a spatiotemporal
11 layout information table,
12   said control unit conducts the processing
13 including:
14   a step of acquiring information on
15 predetermined text media from said input multimedia
16 contents on the basis of said conversion instruction

17 information and reading out said spatiotemporal

18 layout information table from said storage unit to

19 temporarily produce said spatiotemporal layout

20 information table by setting said information on the

21 predetermined text media therein;

22   a step of acquiring data of said

23 predetermined text data from said input multimedia

24 contents through the use of said information on said

25 predetermined text media set in said spatiotemporal

26 layout information table;

27   a step of calculating a display time period

28 of text media included in said output multimedia

29 contents on the basis of said data on said

30 predetermined text media, setting a display time

31 period of said text media in said spatiotemporal

32 layout information table on the basis of the

33 calculated display time period of said text media

34 and setting a playing time period of said media other

35 than said text media included in said output

36 multimedia contents in said spatiotemporal layout

37 information table on the basis of said display time

38 period of said text data set in said spatiotemporal

39 layout information table to bring said spatiotemporal

40 layout information table to completion; and

41   a step of converting said input multimedia

42 contents into said output multimedia contents on the

43   basis of said spatiotemporal layout information table

44   brought to completion.